

REMARKS

The Official Action dated May 10, 2007 rejected the claims under 35 U.S.C. §103(a) based on six references that were combined in seven different ways. In response to the Official Action, Applicant submits the Declaration of William Renaud together with the following discussion to more particularly point out the invention that is disclosed in the subject application.

The array of references cited in the Official Action fails to reconstruct the claimed invention. Claim 1 as presently amended is patentable in that, among other reasons, it requires:

A deck plank made of a composite of polyvinyl chloride that is formed with internal closed cells and glass fibers that are imbedded in the closed cell polyvinyl chloride

Claim 18 is patentable, among other reasons, in that it requires:

A composite deck plank made according to the process comprising the steps of:

blending polyvinyl chloride with glass fibers that have a screen size in the range of 1/64 inch to 1/4 inch to make a polyvinyl chloride/glass melt in which the glass fibers are imbedded in the polyvinyl chloride;

Claim 34 is patentable, among other reasons, in that it requires:

A composite deck plank made according to the steps comprising:

providing a feed mixture to an extruder, said feed mixture including polyvinyl chloride and glass fibers, said polyvinyl chloride being in an amount of about 82% to 99% by weight of the mixture and said glass fibers being in an amount of about 1% to 18% by weight of the mixture;

None of the applied references, either alone or in combination, make Claims 1,2, 4, 6-8, 18-24 and 34-44 unpatentable under 35 U.S.C. § 103.

The Official Action relies on Detterman (5,789,453) in a variety of combinations with five other references to support the claim rejections. In every combination, Detterman is the primary reference. Detterman describes a composition of *chlorinated polyvinyl chloride* ("CPVC"). Detterman does not describe or suggest the use of *polyvinyl chloride* ("PVC") as required by Claims 1, 18 and 34.

The Official Action relies on the fundamental argument that "PVC" is a generic term that means "PVC" and "CPVC." The Official Action states: "Since PVC set forth in the claims includes both chlorinated PVC and non-chlorinated PVC, the chlorinated PVC of Detterman reads on Applicant's PVC." (Official Action, pg. 2). In the "Response to Arguments" section, the Official Action contends: "The PVC as described in the claims does not exclude an embodiment wherein the composite material made of CPVC because PVC generically includes both non-chlorinated PVC and CPVC." (Official Action p. 9). The Official Action cites no authority whatsoever to support this fundamental contention.

The meaning of "PVC" as used in Applicant's claims is the ordinary and customary meaning that "PVC" had to a person of ordinary skill in the art at the time the application was filed. The words of a claim "are generally given their ordinary and customary meaning." Vitronics Corp. v. Conception, Inc., 39 USPQ2d 1573, 1582 (Fed. Cir. 1996). The ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention i.e., as of the effective filing date of the patent application. Phillips v. AWH Corp., 75 USPQ2d 1321, 1326 (Fed. Cir. 2005). A technical term used in a patent document is interpreted as having the meaning that it would be given by persons experienced in the field of the invention, unless it is apparent from the patent

and the prosecution history that the inventor used the term with a different meaning.. Hoechst Celanese Corp. v. BP Chems. Ltd., 38 USPQ2d 1126, 1129 (Fed. Cir. 1996).

The Official Action would require that the Applicant must specifically disclaim all polymers that are mentioned in a reference that the Patent Office might later find. Such a requirement has no legal foundation. The claims are to be read in light of the specification. Markman v. Westview Instruments, Inc., 52 F.3d 967, 34 USPQ 2d 1321 (Fed. Cir. 1995). There is nothing in the specification to suggest that the Applicant intended "PVC" to mean "CPVC" or that "PVC" is used as a generic expression for "CPVC." To read the claims in such a way is contrary to decided law and to the plain meaning of the subject application. Phillips v. AWH Corp., 415 F.3d 1303, 75 USPQ 2d 1321 (Fed. Cir. 2005).

The Official Action's assertion that "PVC" is generic for "PVC" and "CPVC" is unsupported in the record and is contrary to the understanding of those skilled in the art. It is commonly understood by those skilled in the art that polyvinyl chloride or "PVC" is a different compound than chlorinated polyvinyl chloride or "CPVC." (See Declaration of William Renaud ¶ 8).¹ The differences in the compounds result in differences in the chemical and physical properties of PVC and CPVC as well as differences between the commercial use of PVC and the commercial use of CPVC. (See Renaud ¶ 8). Those of ordinary skill and understanding in the industry use the term "PVC" to designate "polyvinyl chloride" and use the term "CPVC" to designate "chlorinated polyvinyl chloride" - a different compound than PVC. (See Renaud ¶ 8).

¹ Cited herein as "(Renaud ¶ 8)."

As used by those skilled in the art, PVC is not a generic term whose meaning includes both PVC and CPVC. (See Renaud ¶ 9). One skilled in the art would understand that "PVC" as used throughout the subject application does not include CPVC. (See Renaud ¶ 15). As used in the industry and as understood by one skilled in the art, the term "PVC" does not mean both non-chlorinated PVC and CPVC. (See Renaud ¶ 16). The assertion that "PVC" is generic for a combination of "PVC" and "CPVC" is contrary to the understanding to those skilled in the art. (See Renaud ¶ 16). The assertion that "PVC" is understood by those skilled in the art as generic for a combination of "PVC" and "CPVC" is erroneous. (See Renaud ¶ 16).

The declarations of Dr. Timothy Laher² and Dr. Michael Ferralli³ further support the fact that PVC is not generic for CPVC and PVC. The Official Action asserts that the Laher and Ferralli Declarations are not commensurate in scope with the claims because the claims do not recite chemical and physical properties that are discussed in the declarations. That simply ignores the fundamental point of those declarations - namely, that PVC cannot properly be considered a generic term for CPVC and PVC.

The Ferralli and Laher declarations are evidence of the fact that PVC is not generic for CPVC and PVC. Dr. Laher states that CPVC and PVC are different polymers because their chemical differences infer a substantially different structure. (See Laher ¶ 5). Dr. Laher concludes "that the chemical structural properties of PVC cannot be ascertained, predicted, or demonstrated from the chemical structural properties of CPVC to an extent reasonably beyond such prediction from the properties of other related polymers." (Laher ¶ 5). Dr. Ferralli states

² Cited herein as "(Laher ¶ _)."

³ Cited herein as "(Ferralli ¶ _)."

that CPVC and PVC are different polymers based upon their physical properties. (See Ferralli ¶ 5). Similarly to Dr. Laher, Dr. Ferralli concludes that “the physical properties of PVC cannot be ascertained, predicted, or demonstrated from the physical properties of CPVC to an extent reasonably beyond such prediction from the properties of other related polymers.” (Ferralli ¶ 5). The inescapable point of both declarations is that PVC cannot properly be considered a term that also includes CPVC. Accordingly, the Ferralli and Laher declarations present further, uncontroverted evidence that PVC is not generic for PVC and CPVC and that PVC as used in the claims does not include an embodiment wherein the composite material is CPVC and not PVC.

The evidence set forth in the Renaud, Laher and Ferralli Declarations is consistent with and further supported by the disclosure of Detterman. Detterman does not describe PVC as required by Claims 1, 18 and 34. Detterman describes a chlorinated polyvinyl chloride (“CPVC”) composition. Detterman distinguishes CPVC compositions from polyvinyl chloride (“PVC”) compositions. Throughout, Detterman identifies and discusses CPVC as a composition that is distinct from PVC. Indeed, Detterman teaches that CPVC is made from PVC! That teaching incorporates the very excerpt from Table 1 that is cited in the Official Action! Detterman confirms the fact that CPVC and PVC are properly recognized in the art as different compositions!

All of the prior art combinations of the Official Action rely on Detterman. Therefore, the argument that “PVC” is generic for “PVC and CPVC” is essential to the Official Action’s rejections under 35 U.S.C. §103. However, no evidence supports the Patent Office’s assertion that PVC is a generic term that means CPVC. Indeed, all the evidence is contrary to the

assertion that "PVC" really means "PVC and CPVC." Since Detterman fails to disclose PVC within the meaning of the claims and all of the combinations of prior art proposed in the Official Action include Detterman as the principal reference, the claimed invention is patentable.

The Claims are patentable for the additional reason that they require "internal closed cells in said composite material [that] define 30% to 70% of said volume." The Official Action offers no citation to Detterman to support the contention that the CPVC foam of Detterman would have a closed cell content from 30% to 70% by volume. Instead, the Official Action infers that result based on an argument that "like material has like property." The Official Action argues that Detterman discloses the same blowing agent as Applicant and also discloses a foam having a specific gravity that is within the range of the PVC in the Applicant's claims. On that basis, the Official Action infers a closed cell content from 30% to 70% by volume on the assertion that the CPVC foam of Detterman is "like material" that "reads on Applicant's PVC." That argument fails because the PVC in Applicant's claims is not generic to the CPVC in Detterman. The CPVC compound of Detterman is not included in the PVC compound of the Applicant's claims. Thus, there are no "like materials" and no basis for the assumption that Detterman has a "like property" of a closed cell content from 30% to 70% by volume.

In addition, the Official Action concedes that Detterman does not disclose various other requirements of Claims 1, 18 and 34 such as the amount of glass fiber or the amount of blowing agent. To overcome that shortcoming, the Official Action relies on citations to Detterman that merely suggest that reinforcing agents such as glass fibers, the quantity of blowing agent, the extruder temperature, and extruder screw speed can be varied for CPVC compounds to achieve an (undefined) intended purpose. Such "obvious to try" arguments do not make the claimed deck

plank unpatentable. If the prior art merely discloses numerous possible combinations but gives no direction as to which of those many choices is likely to be successful, it does not constitute a suggestion that makes the claim unpatentable. *In re Antonie* 195 USPQ 6 (CCPA 1977).

Significantly, nothing in Detterman teaches that any quantity of glass fibers or blowing agent should be added to PVC. Detterman teaches only the use of CPVC and combinations thereof.

The Official Action also improperly attempts to rely on a presumption that the claimed ranges are unpatentable unless Applicant demonstrates unexpected results. The Official Action cites *In re Aller*, 105 USPQ 233 (CCPA 1955) to support that contention. However, *In re Aller* applied to a situation in which the applicant's process was identical to that of the prior art except for variations in temperature and ingredient concentrations. In *In re Aller*, the proposed combination had met the ingredient limitations of the claim and the point of novelty was said to be in optimum ranges of temperature and ingredient concentrations.

In re Aller circumstances do not exist in this case. The Applicant's PVC product is not identical to the CPVC product of the cited prior art. The differences are not a matter of ingredient concentrations. The differences are in the identity of the ingredients themselves! The CPVC of Detterman is not PVC as claimed. Nothing in the Application supports a conclusion that a CVPC plank would be the result of the claimed process. Therefore, *In re Aller* is inapposite to Claims 18 and 34 and there is no burden on the Applicant to show unexpected results. Rather, the burden remains on the Patent Office to demonstrate how the differences between the claimed invention and the combination of references are unpatentable.

Claims 18 and 34 are product-by-process claims. The Official Action relies on *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1983) to dispute the patentability of those claims

irrespective of any differences in the process. The premise for applying *In re Thorpe* is that the product of Claims 18 and 34 is the same as the product of the combination of references as put forth in the Official Action.

Thorpe is inapplicable to the subject claims. In *Thorpe*, the Applicant conceded that the product of his process was the same as the product of the prior art method. In this application, the Applicant does not so concede. The Applicant had asserted and proved that the products are decidedly different – the product proposed by the Official Action is a CPVC and the product of Claims 18 and 34 is a PVC. Assuming that the collection of references could properly be combined according to the Official Action, the combination would result in a CPVC plank. The claims require a PVC plank. As previously explained, PVC is not a generic term for CPVC. No proper reading of *Thorpe* supports a theory that process steps can be ignored when, as here, the reference results in a product that is different than the product that is claimed.

The patentable differences between Detterman and Claims 1, 18 and 34 are not made unpatentable by any combination of Detterman with Nystrom. Nystrom does not describe a polymer material. Nystrom describes a wooden plank. It is cited in the Official action for the shape of its profile - not for its composition. Neither Nystrom nor Detterman disclose a PVC deck plank as claimed and no combination of Detterman with Nystrom can produce a PVC deck plank.

To support the rejection of various dependant claims, the Official Action proposes adding Detterman and Nystrom to various combinations of still other references. However, those additional references cannot properly be combined with Detterman or with each other to make any of the claims unpatentable. The Patent Office is required to provide sufficient evidence to

show that one having ordinary skill in the art would have done what the Applicant did. *United States v. Adams*, 383 U.S. 39, 52 148 USPQ 479, 483-84 (1966); *In re Kahn*, 441 F.3d 977, 987-88, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006) See *Ex parte* CRAWFORD et al. Appeal 2006-2429, p. 8. (BPAI, May 30, 2007). "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements: instead there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." (*In re Kahn*, 441 F. 3d 977, 988 (Fed. Cir. 2006) cited with approval in *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 82 USPQ2d 1385 (2007). The Official Action concedes that "neither Detterman nor Nystrom teaches or suggests the processing steps recited in the claims," but offers no analysis of why the disclosures of the cited references should be combined. See *Ex parte* ERKEY et al. , Appeal 2007-1375 p. 8 (BPAI May 11, 2007). Thus, there is no legal basis for combining the teachings of Detterman with the other cited references.

Motivation to combine references "may be found in implicit factors, such as 'knowledge of one of ordinary skill in the art, and [what] the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art'." *Alza Corp. v. Mylan Labs.*, 464 F.3d 1286, 1291, 80 USPQ2d 1001, 1004 (Fed. Cir. 2006) (quoting *In re Kahn*, 441 F.3d 977) See *Ex parte* KUBIN et al., Appeal 2007-0819 p. 9 (BPAI May 31, 2007). However, such implicit factors do not support the combination of Detterman with the other cited references.

The Official Action's bare assertions of "ordinary skill in the art" cannot bridge the gaps between the references that the Official Action attempts to combine. Imbuing one of ordinary skill in the art with the knowledge of the invention at issue in the absence of art that conveys or suggests such knowledge is to fall victim to hindsight reconstruction. *Al-Site Corp. v. VSI Int'l*,

Inc., 174 F.3d 1308 (Fed. Cir. 1999). Detterman would not lead one skilled in the art to attempt to modify CPVC to have PVC.

The rejection proposed by the Official Action is necessarily based on the Applicant's own teachings and not the teachings of the cited references. In making combinations of multiple references, the Official Action improperly relies on the subject Application as a road map for assembling a mosaic of references to try to reproduce the invention as specified in various claims. However, a determination of obviousness must involve more than indiscriminately combining prior art. *Micro Chem., Inc. v. Great Plains Chem. Co., Inc.*, 103 F.3d 1538, 1546 (Fed. Cir. 1997), cert. denied, 117 S. Ct. 2516 (1997). What may have been within the knowledge of one skilled in the art is insufficient absent evidence that one of ordinary skill in the art actually possessed such knowledge. *Smiths Indus. Med. Sys., Inc.*, 183 F.3d 1347, 1356 (Fed. Cir. 1999).

Even if the combinations proposed in the Official Action were proper (which they are not), the claimed invention does not result. No combination of the references produces "*a composite of a polyvinyl chloride*" as further specifically required by the claims.

None of Koffler, Patterson, Guntherberg, or Ittel describe closed cell PVC such as required by the claims. Koffler (6,818,676) is directed to a foam composition for use in cushion materials such as carpet padding. It is cited for its recitation of a physical blowing agent. There is no suggestion as to how that composition could be used in constructing deck planks or how the blowing agents therein described could be combined with other compositions that are used in deck planks. The Official Action argues that Koffler teaches a foam composition for use in fencing. It does not. Koffler suggests that the foam cushion therein described "provides for the

use of a foam cushion as disclosed herein above for . . . fencing . . . “ (Koffler, Col. 3, lines 14-39). That is to say that the foam cushion could be used in connection with fencing, i.e. fence padding. The Official Action’s resort to distorting the language of Koffler to imply that the same materiel that is used to make cushions could also be used to make fences, floors, siding, etc. demonstrates the fallacy and this argument.

Patterson (6,784,230) is directed to compositions wherein vinyl chloride resin is combined with a cellulosic material. In contrast, the subject application specifically teaches away from the use of such compositions for decking! This attempt to combine Patterson in contravention of the teachings of the subject application is improper. Patterson is applied for its recitation of citric acid as a chemical blowing agent. (Official Action, p. 11, lines 16-19). There is no suggestion in Patterson that the citric acid blowing agent therein described could be combined with other compositions such as described in the other cited references or in the subject application.

The Official Action cites Ittel (2005/0058822) with regard to the length of glass fibers as disclosed therein. Ittel concerns a composition wherein lignocellulosic or cellulosic material is combined with a synthetic fiber. Again, the subject application specifically teaches away from the use of cellulose compositions such as taught in Ittel making the combination of Ittel improper.

Guntherberg (6,566,436) is cited for its use of reinforcing glass fibers of particular dimensions in the composition therein described. Guntherberg is directed to a thermoplastic molding composition for use in garden buildings, garden equipment, garden furniture, garden accessories, and stock fences and animal cages. The Official Action speculates that such

Serial No. 10/800,501
Amdt. dated November 8, 2007
Reply to Office Action of May 10, 2007

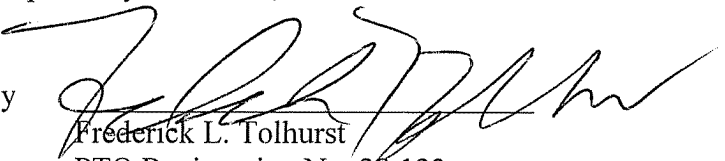
material “could serve as fencing material.” (Official Action p. 12, lines 3-5). Fatal to that argument is the fact that nothing in Guntherberg suggests how the composition described in Guntherberg could serve as a useful decking material or that such fencing materials are interchangeable with decking materials.

In summary, the Official Action has collected an array of references that recite isolated details of the Applicant’s invention and then combined those references according to the Applicant’s own teachings and without any justification as to why one skilled in the art would make such a combination. Such a reconstruction of the invention from assorted patents that are collected from numerous prior art references does not make an invention unpatentable.

Claims 2, 4, 6-8, 19-24 and 35-44 all depend from Claims 1, 18 or 34. Accordingly, Claims 2, 4, 6-8, 19-24 and 35-44 are patentable for the same reasons as stated with respect to Claims 1, 18 and 34.

Accordingly, Claims 1, 2, 4, 6-8, 18-24, and 34-44 are believed to be in condition for allowance and such allowance is hereby respectfully requested.

Respectfully submitted,

By 

Frederick L. Tolhurst
PTO Registration No. 28,123
Cohen & Grigsby, P.C.
11 Stanwix Street, 15th Floor
Pittsburgh, PA 15222
(412) 297-4900

Appendix

Declaration of

William Renaud